



From the desk of...

Advanced technology for better health



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Today, people who properly manage their health can expect to live to enjoy their 70th birthday. That's a vast improvement over life expectancy fifty years ago. Advances in modern health care are largely responsible for this change. Early in this century, body temperature was the main indicator of good health. If someone's temperature went above normal, the diagnostic process began. Unfortunately, there are many diseases that don't start with a temperature increase. Today, routine health management includes such measurements as blood pressure, blood chemistry, X-rays, CAT scans, and more.

The same evolution has occurred in machinery management. Several decades ago, a change in overall vibration levels was the first indication of a machinery problem. When the overall vibration level went up, the diagnostic process began. The first clue that this was not sufficient came with the realization that an increase in overall vibration is not always the earliest indication of

many machinery problems. When some machinery problems, such as misalignment, first begin, overall amplitudes can initially *decrease*.

Changes in the structural integrity of machine components, fluid instabilities, and other machine problems can also progress past the point of effective management by the time vibration amplitude has increased.

Today, we would not consider evaluating a patient's health based only on a temperature measurement. Often, a blood panel, an electrocardiogram (EKG), or a CAT scan is required to determine what is happening and what corrective actions should be taken. Similarly, we shouldn't consider evaluating a machine's health using only an overall vibration level. So, why do people do it?

In answering this question, the analogy between human and machine health care is useful. Cost is one of the many driving forces that causes shortcuts. Blood panels are expensive and time-consuming, so they are used less than the thermometer or blood pressure cuff. However, no one with a choice would consider eliminating the use of blood tests in his health care.

In the same way, cost is a driving force in the practice of machinery health care. It is less expensive to process *only* the overall vibration level than it is to process *both* the overall and the dynamic vibration waveform. Consequently, a short-sighted approach is to attempt to manage and assess machinery health based only on overall vibration levels. What can be missed, however, is the opportunity to correct a machinery problem very early before it becomes severe enough to adversely affect the plant

process, operating costs and output. The good news is that the cost of machinery measurements and data management are steadily decreasing.

In spite of these decreasing costs associated with today's machinery management tools, some machinery users are still attempting to protect and manage their machinery using only overall vibration levels. In some cases, this has meant that they are replacing a traditional monitoring system with vibration "transmitters" thinking they are significantly reducing cost. Are they better off? In this issue of the Orbit, Bently Nevada takes an in-depth look at this situation in articles that examine both the technical and economic considerations of using vibration "transmitters."

We strongly believe that it is necessary to continually highlight key issues surrounding the correct measurement, monitoring, and diagnostics of machinery. Whether it is XY shaft versus single plane bearing housing measurements on fluid film bearing machines, continuous versus scanning monitors on critical machines, or the use of a comprehensive diagnostic methodology versus using spectrum only, we have always relied on sound engineering principles to develop products and methodologies that serve the long term interests of our customers.

The "vibration transmitter" issue discussed in this copy of the Orbit is very important. As you evaluate your machinery protection and management options, consider all the high performance and value options you have today compared to those available 20 years ago. Properly applied, these options don't cost, they pay big dividends in avoiding unplanned downtime and reducing maintenance costs. Let us show you how. ■